NOTES.

THE vacancy in the representation of Cambridge University, caused by the death of Mr. Beresford Hope, raises again the question of the desirability that the Universities should be represented in Parliament by men of distinguished culture, whether literary or scientific. Men of science will be glad to hear that a movement is on foot in Cambridge to induce the President of the Royal Society to allow himself to be nominated as a candidate for the membership of the University. A meeting will be held on Saturday for the purpose of considering the question of the representative. It is believed that Prof. Stokes, if he finds the feeling to be strong in favour of his acceptance, will regard it as his duty to place his services at the disposal of the electors. A more distinguished representative never offered himself for the suffrages of any University in this country. His presence in the House of Commons would be another pledge that questions involving the interests of science would be discussed with adequate knowledge in that assembly.

IN presenting the prizes to the successful students of the Bath Lane Science and Art School at Newcastle-on-Tyne, Lord Randolph Churchill expressed the opinion that when "the State has laid the foundation by freely contributing to elementary education, localities ought to come in and ought to build on that foundation whatever edifice may be necessary for the further and higher technical education of the artisan." "This school," he continued, "is essentially the result of pure local effort, pure local energy, and pure local pride. You have, I understand, carried on the whole work of this school without the smallest assistance from Government of any sort or kind. Now, I was saying that technical education is supposed to be a great requirement of the present day, and I was using the illustration of your school to show that localities can if they wish, if they have the energy and the determination, supply that technical education for themselves." In a letter to the *Times* a writer signing himself "Y." has exposed the ignorance displayed by Lord Randolph Churchill in this astonishing statement. The Newcastle school, instead of being carried on simply by means of "local effort," has been largely aided by the Government. As "Y." points out, the last Report of the Science and Art Department shows that in 1886 the payments on results made to the school were for science £1212 10*s*., and for art £238 10*s*., while the students' fees for instruction in science were £1228, and in art £150. It is discreditable that a man in Lord Randolph Churchill's position should be capable of making such a mistake as this. The incident is important, for it indicates the spirit in which too many of those who talk wildly about "economy" approach the consideration of the grave question as to the duty of the State with regard to education. Lord Randolph Churchill has been Chancellor of the Exchequer, and may some day be Chancellor of the Exchequer again. With his crude notions and inaccurate information, the injury he might do in this position to our educational system is simply incalculable.

THE College of State Medicine, lately incorporated, ought to be a remarkably successful institution, if we may judge from the names of its officers. The Chairman of Council is Sir Joseph Fayrer, K.C.S.I., F.R.S. The following are the members of the Council:—Sir John Watt Reid, K.C.B., Sir Thomas Crawford, K.C.B., Sir William Guyer Hunter, K.C.M.G., M.P., Sir Henry Roscoe, F.R.S., Sir Douglas Maclagan, Surgeon-General William Robert Cornish, C.I.E., Richard Quain, F.R.S., Edward Klein, F.R.S., Robert Brudenell Carter, and Arthur Trehern Norton. The following are *ex-officio* members:—The President of the Sanitary Institute, the President of the Society of Medical Officers of Health, the President of the Public Health Medical Society, the Professor of Public Health to the College. Mr. James Cantlie is the honorary secretary.

THE first Congress of the Dutch Society of Naturalists lately met at Amsterdam under the presidency of Dr. Stoknis, who delivered an address on nationality and natural science. Among the other addresses were the following: on Martinus of Marum, who made a large electric machine at the end of the last century, by Prof. Bosscha (Delft); and on the education of future naturalists, by Prof. Spruyt (Amsterdam).

AN Exhibition of Textile Goods and Machinery will be held at Warsaw about the middle of December next. It will be open to all countries.

THE expedition which the Finnish Archæological Society despatched to the Upper Yenisei last summer, to prosecute archæological researches in that locality, has just returned to Helsingfors. It has brought back drawings of about thirty stone figures, and copies of a large number of inscriptions, hitherto not deciphered, on a rock, on nine raised stone slabs, and on many stones along the upper course of the Yenisei. The expedition has also gathered a vast collection of objects belonging to the Siberian Bronze Age.

IN his latest Annual Report, Mr. Putnam, Curator of the Peabody Museum of American Archæology and Ethnology, says that during the past year several large collections of special interest have been added to the Museum. The most important is the Bucklin collection from ancient graves in Peru, principally at Ancon. This collection is particularly rich in textiles and in ornaments and implements made of silver and bronze; and among the objects in pottery there are many new forms and styles of ornamentation. Another collection of over 300 specimens of pottery obtained from the province of Piura, Peru, has also been purchased, and nearly every vessel adds some important feature to the already instructive Peruvian collection in the Museum. A third collection consists of 337 pottery vessels, a number of whistles and other objects made of pottery, 245 stone implements, and several large carved stones, some circular, and others resembling animals, supposed by some archæologists to be seats, and by others to be metates. This collection has been catalogued and placed in the exhibition cases with the other objects from the ancient graves in Chiriqui. It was obtained from the well-known collector of antiquities in Chiriqui, Mr. J. A. McNiel, who has resided in the State of Panama for many years. Mr. Putnam expresses much regret that Mr. McNiel has not been able to keep together the contents of each grave. He is dependent on the sale of the specimens for the means to carry on his work, so that many of the objects he obtained are now widely scattered, and archæologists have no means of tracing the development of the arts of the people, which could have been done had the collection been kept together and the associations of every object carefully noted.

WE have received the Proceedings of the U.S. National Museum during the year 1886. This is the ninth volume of the series. It contains many interesting and valuable papers, some by members of the scientific corps of the National Museum, others by writers who have made portions of the collections of the Museum subjects of special study. The volume opens with a list of fishes collected in Arkansas, the Indian Territory, and Texas, in September 1884, with notes and descriptions, by Mr. D. S. Jordan and Mr. C. H. Gilbert. Among the other papers are: notes on fulgurites, by Mr. G. P. Merrill; a review of Japanese birds, by Mr. L. Stejneger; a catalogue of animals collected by the Geographical and Exploring Commission of the Republic of Mexico, by Mr. F. Ferrari-Perez; a description of six new species of fishes from the Gulf of Mexico, with notes on other species, by Mr. D. S. Jordan and Mr. B. W. Evermann; and Norsk naval architecture, by Mr. G. H. Boehmer. At the end of the volume there are twenty-five plates, each accompanied by its explanation.

Some of the difficulties with which the curator of a museum in tropical climates has to contend are described in the last report on the Colombo Museum. Mr. Haly states that naphthaline is not so powerful a protection against the effects of climate as was anticipated. It seems to prevent the attacks of mites, but it is powerless against fungus. It is hoped that it will ward off the attacks of the fish insect on the labels. As an instance of the rapidity with which this pest works, it is mentioned that one case was re-painted, and the objects rearranged and labelled. No naphthaline was procurable at the time, and in a fortnight several labels had been defaced and several numbers lost. Carbolic acid and corrosive sublimate have both been mixed with the gum, but their use is objectionable, as they discolour the labels, and do not afford permanent protection. Every object in a tropical climate, Mr. Haly says, ought to be exhibited on its own stand, and that stand labelled by hand in black or white paint. The Museum has also been attacked lately by a fungus. Not only have the specimens themselves been attacked, but the wood of the teak cases, and even the glass, has been covered. In one case the insects were absolutely rolled round and connected together by its fine filaments—filaments so fine as to be invisible through the glass. Naphthaline, benzine, cyanide of potassium, carbolic acid, and other substances have all been tried in vain: the only check to its growth was citronella oil.

The "Educational List and Directory of the United Kingdom for 1887-88" (Sampson Low), edited by Mr. William Stephen, has just been published. This is the second issue of the work. The editor's aim is to concentrate within reasonable space the names of the chief educational institutions of the Kingdom. Besides being a guide for the use of parents and guardians, and a directory for all who give attention to educational matters, the volume is interesting, as Mr. Stephen claims, on account of the fact that it is the first methodical effort to unite for practical purposes the designations of our educational institutions, from the Universities downwards, in England, Wales, Scotland, and Ireland. No "descriptive matter" has been introduced.

The Cardiff Naturalists' Society have issued a valuable descriptive list of the indigenous plants found in the neighbourhood of Cardiff, with a list of the other British and exotic species found on Cardiff Ballast Hills. The compiler is Mr. John Storrie, Curator of the Cardiff Museum.

A stalactite cave has been discovered near Steinbach in the Upper Palatinate. It can only be approached by a shaft 1 square metre in diameter and 40 metres deep. The cave is divided into several compartments, through one of which a stream of water slowly flows. The numerous stalactites are of great beauty. Another stalactite cavern, equalling the celebrated Dechen cavern, both in extent and peculiarity of form, has been discovered in the so-called Billstein, between Hirschberg and Warstein (Westpnalia). The interior consists of several chambers. Numerous animal remains (probably prehistoric) have been found in the cave.

The death is announced of Herr August Kappler, whose excellent book on Dutch Guiana is well known. He died at Stuttgart, aged seventy-one.

We regret to announce the death of Dr. E. Luther, Professor of Astronomy at the Königsberg University, also Director of the Observatory. He was born February 24, 1816.

The weather in Iceland during the summer has been very unusual. The ice did not leave the north and east coast till the middle of September, or quite a month later than usual. Storms and fogs have been very frequent. The last mail brings news that the weather was then (the middle of October) dry and fine. Frost had, however, set in in several parts. This is the last news we shall have from the island until next spring.

At a recent meeting of the Wellington (New Zealand) Philosophical Society, Sir James Hector exhibited samples of trachyte tuff and breccia, constituting the auriferous deposit lately found in the level ground west of Te Aroha. The material, which appeared to be somewhat of the nature of an infiltrated quartz reef which had been decomposed and then distributed as a surface deposit, was found to contain gold at a rate varying from two ounces to fourteen ounces to the ton. The gold occurs in twisted angular flakes and grains, and is associated in a light feldspar sand with heavier grains of quartz mica and titanic iron. Sir James Hector is of opinion that it will probably prove to be the outcrop of an important reef, from which the sulphides have been removed by decomposition, so that gold is left in its free state. The gold is the usual alloy of the district—consisting of gold 80·47 per cent., silver 16·91, loss 2·62, previous assays having varied from 77 to 84 per cent.

The last number of the *Excursions et Reconnaissances* of Saigon contains an account by M. Navelle of a journey which he made in Annam from the port of Thi-Nai, commonly called Quin-hon, to Bla. The route lay through the great town of Binh-Dinh, and by the ruins of Quin-hon, at one time the capital of the Chams or Ciampois. This leads the traveller to narrate the vicissitudes of the once powerful kingdom of Ciampa, which was overthrown in the fifteenth century, after seven centuries of contest with Annam. The narrative is mainly interesting from the circumstance that the traveller visited a number of important towns hitherto unseen by Europeans. At the town of Dong-pho, he met an official who at one time performed curious functions. The Kinh-li was an Annamite official appointed to reside beyond the frontiers to organize Annamites who fled from their native country, and to direct their raids against neighbouring States. These vagabonds, thus directed, acted as the van-guards of regular Annamite invasion. M. Landes, in the same number, continues his researches into the folk-lore of the races of French Indo-China. In the present instance he gives the tales and legends of the Tjames, Chams, or Ciampois, above-mentioned. They have long been subjugated, and are now divided into two groups, one inhabiting the Bin-thuan province, the other Cambodia. Until recently they were amongst the most unknown peoples of the peninsula, but M. Aymonier's accounts of his long exploration in Binh-thuan, which were published in recent numbers of *Excursions*, have thrown much light on the subject. The stories published by M. Landes were collected from the mouth of a Cham, and are mostly fairy tales.

Dr. Karl Pettersen, Director of the Tromsö Arctic Museum, has lately written a pamphlet on the state of the drift-ice in the Arctic seas during the last few years. In this pamphlet he offers some suggestions as to the way in which attempts to reach the North Pole should be made. "It seems to me," he says, "that every year shows more and more clearly that it is a sheer waste of life and money to despatch casual and erratic expeditions to the North Pole. In my opinion the result would be attained most easily, surely, and cheaply by despatching every year, for a period of ten or eleven years, a certain number of well-equipped steamers from certain suitable spots towards the Pole. As the ice-masses in the Polar Basin are, without doubt, in a constant but varying motion, this plan would enable one or another of the expeditions to seize the right moment for a dash northward. We could not, of course, be absolutely certain of success, for experience has proved that the state of the ice in a particular locality at a particular time does not enable us to predict what it will be in the same locality in the following year. Still, the opportunity to reach a high latitude would present itself sooner or later. The expeditions of past years having almost conclusively demonstrated that it will be impossible to reach the North Pole along the west coast of Greenland, the *point d'appui* for the journeys on the plan advocated would be confined to the European and Asiatic Polar seas. The routes I should recommend are four: viz. one along East Spitzbergen to Franz Josef Land, and northwards, starting from the north of Norway; one east of Franz Josef Land, starting from the Yenisei or Obi; one *viâ* Franz Josef Land, starting from the New Siberian Islands or the Lena; and one from a suitable spot in Behring Strait. I have every reason to believe that if four such expeditions were in readiness in these localities every year during a period of eleven years, we should by the end of that time, by one or another of the routes, have solved the problems which still face us around the Pole. Probably the scheme might be carried out most advantageously by international co-operation, as in the case of the Polar Research Expeditions of 1882–83. In any case, I venture to think that the plan of any expeditions should not be finally formed before July, or, if possible, August. By that time many of the huntsmen have returned from their first voyage to several parts of the Arctic Sea, and the expeditions would be in possession of a fair knowledge of the state of the ice in each. I believe that, should the route chosen be *viâ* Spitzbergen or Novaya Zemlya, a careful study of the weather and wind in North Norway during the spring and early summer would benefit Polar expeditions immensely, showing whether the route to the north or east of Spitzbergen should be followed, or the more eastern one by Novaya Zemlya."

THE additions to the Zoological Society's Gardens during the past week include a Grand Eclectus (*Eclectus roratus*) from Moluccas, presented by Miss P. Lockwood; a Goffin's Cockatoo (*Cacatua goffini*), habitat uncertain, presented by Miss Barton; a Water Rattlesnake (*Crotalus adamanteus*), a Water Viper (*Cenchris piscivorus*), two American Black Snakes (*Coluber constrictor*), a Chicken Snake (*Coluber quadrivittatus*), two Mocassin Snakes (*Coluber fasciatus*) from Florida, presented by the Natural History Society of Toronto; two Green Lizards (*Lacerta viridis*), twelve Spotted Salamanders (*Salamandra maculosa*), two Common Snakes (*Tropidonotus natrix*) from Italy, presented by Messrs. Paul and Sons; an Algerian Tortoise (*Testudo mauritanica*) from Algeria, deposited; an Aye-Aye (*Chiromys madagascariensis*) from Madagascar, purchased; six Painted Terrapins (*Clemmys picta*), two Corn Snakes (*Coluber guttatus*), two Milk Snakes (*Coluber eximius*), two Mocassin Snakes (*Tropidonotus fasciatus*), two Ribbon Snakes (*Tropidonotus saurita*), two Hog-nosed Snakes (*Heterodon platyrhinos*), two Grass Snakes (*Cyclophis vernalis*), six Dekay's Snakes (*Ischnognathus dekayi*), nine American Green Frogs (*Rana halecina*), ten Noisy Frogs (*Rana clamata*), a Wood Frog (*Rana sylvatica*), a Changeable Tree Frog (*Hyla versicolor*), nine Red-backed Salamanders (*Plethodon erythronotus*) from Canada, received in exchange; a Blood-breasted Pigeon (*Phlogœnas cruentata*), bred in the Gardens.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 *NOVEMBER* 6–12.

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on November 6

Sun rises, 7h. 4m.; souths, 11h. 43m. 44·2s.; sets, 16h. 24m.: right asc. on meridian, 14h. 45·2m.; decl. 15° 59′ S. Sidereal Time at Sunset, 19h. 26m.

Moon (at Last Quarter November 8, 17h.) rises, 19h. 50m.*; souths, 3h. 54m.; sets, 11h. 58m.: right asc. on meridian, 6h. 54·4m.; decl. 20° 14′ N.

Planet.	Rises.		Souths.		Sets.		Right asc. and declination on meridian.				
	h.	m.	h.	m.	h.	m.	h.	m.	°	′	
Mercury..	9	9 ...	13	3 ...	16	57 ...	16	4·7 ...	23	21	S.
Venus ...	2	57 ...	8	59 ...	15	1 ...	11	59·6 ...	0	22	S.
Mars ...	1	16 ...	8	0 ...	14	44 ...	11	1·4 ...	7	59	N.
Jupiter ...	7	12 ...	11	53 ...	16	34 ...	14	54·4 ...	15	44	S.
Saturn ...	21	48*...	5	35 ...	13	22 ...	8	35·5 ...	19	0	N.
Uranus ...	4	17 ...	9	54 ...	15	31 ...	12	55·4 ...	5	14	S.
Neptune..	17	7*...	0	49 ...	8	31 ...	3	49·1 ...	18	16	N.

* Indicates that the rising is that of the preceding evening.

Occultations of Stars by the Moon (visible at Greenwich).

Nov.	Star.	Mag.	Disap.		Reap.		Corresponding angles from vertex to right for inverted image.	
			h.	m.	h.	m.	°	°
6 ...	*g* Geminorum ...	5½ ...	22	34 ..	22	51 ...	338	302
8 ...	7 Leonis ...	... 6½ ...	22	30 ...	23	8 ...	90	182
9 ...	ψ Leonis ...	... 6 ...	1	52 ...	2	42 ...	78	181

Nov.	h.	
7 ...	8 ...	Mercury stationary.
8 ...	0 ...	Saturn in conjunction with and 1° 1′ north of the Moon.
9 ...	2 ...	Jupiter in conjunction with the Sun.
12 ...	1 ...	Venus in conjunction with and 3° 42′ south of the Moon.

Saturn, November 6.—Outer major axis of outer ring = 42″·2; outer minor axis of outer ring = 13″·5; southern surface visible.

Variable Stars.

Star.	R.A.		Decl.							
	h.	m.	°	′				h.	m.	
U Cephei	0	52·3 ...	81	16	N. ...	Nov.	7,	2	49	*m*
						,,	12,	2	29	*m*
U Monocerotis ...	7	25·4 ...	9	33	S. ...	,,	9,			*M*
U Ophiuchi	17	10·8 ...	1	20	N. ...	,,	7,	3	9	*m*
					and at intervals of			20	8	
U Sagittarii... ...	18	25·2 ...	19	12	S. ..	,,	7,	0	0	*m*
R Scuti	8	41·5 ...	5	50	S. ...	,,	7,			*m*
β Lyræ...	18	45·9 ...	33	14	N. ...	,,	6,	3	0	*M*
S Vulpeculæ ...	19	43·8 ...	27	0	N. ...	,,	8,			*m*
η Aquilæ	19	46·7 ...	0	43	N. ...	,,	8,	5	0	*m*
S Sagittæ	19	50·9 ...	16	20	N. ...	,,	6,	1	0	*m*
						,,	9,	1	0	*M*
δ Cephei	22	25·0 ...	57	50	N. ...	,,	10,	3	0	*M*

M signifies maximum; *m* minimum.

Meteor-Showers.

	R.A.	Decl.	
Near the Pleiades ...	60° ...	20° N. ...	Bright; rather slow.
From Camelopardalis	102 ...	73 N. ...	Very swift.
Near η Leonis	149 ...	22 N. ...	Swift; streaks.

GEOGRAPHICAL NOTES.

THE Danish Government has decided upon hydrographically measuring and charting the Guldborg Sound, the new harbour at Odense, in the Island of Funen, and the Randers and Mariager fjords in Jutland. Two vessels will also be engaged in preparing a naval chart of the coast around Denmark. It has also been decided to despatch an Expedition—the cost being estimated at £4000—to Iceland next summer, for the purpose of effecting hydrographical measurements around that island. Great fjords and waterways are here still unmeasured—a danger to navigation and a loss to science. It is believed that these researches may lead to important scientific discoveries, principally as regards zoology, meteorology, and geography. Moreover, they would probably be of great benefit to the Iceland fisheries, which are far from being thoroughly developed on account of the ignorance of existing fishing-banks, the temperature of the sea, &c. The researches, which will be similar to those carried out around Norway for some years past, will be effected with the Government schooner *Ingolf*, a vessel particularly adapted for the purpose. It is intended to employ the months of May, June, July, and August in this work, which, it is estimated, will be fully accomplished in five years.

IN the *Bollettino* of the Italian Geographical Society for September Signor E. Modigliani concludes his series of papers on Nias, with a detailed account of the physical features, natural history, and social condition of that island. The hilly surface is